

[illegible][illegible]

```
DDDDDDDD      IIIIII      SSSSSSSS  MM      MM      NN      NN      TTTTTTTTTT  DDDDDDDD      SSSSSSSS  PPPPPPPP
DDDDDDDD      IIIIII      SSSSSSSS  MM      MM      NN      NN      TTTTTTTTTT  DDDDDDDD      SSSSSSSS  PPPPPPPP
DD      DD      II      SS      MMMM  MMMM  NN      NN      TT      DD      DD      SS      PP      PP
DD      DD      II      SS      MMMM  MMMM  NN      NN      TT      DD      DD      SS      PP      PP
DD      DD      II      SS      MM  MM  NNNN  NN      NN      TT      DD      DD      SS      PP      PP
DD      DD      II      SSSSSS  MM      MM  NN      NN      NN      TT      DD      DD      SSSSSS  PPPPPPPP
DD      DD      II      SSSSSS  MM      MM  NN      NN      NN      TT      DD      DD      SSSSSS  PPPPPPPP
DD      DD      II      SS      MM      MM  NN      NN      NN      TT      DD      DD      SS      PP
DD      DD      II      SS      MM      MM  NN      NN      NN      TT      DD      DD      SS      PP
DD      DD      II      SS      MM      MM  NN      NN      NN      TT      DD      DD      SS      PP
DD      DD      II      SS      MM      MM  NN      NN      NN      TT      DD      DD      SS      PP
DDDDDDDD      IIIIII      SSSSSSSS  MM      MM  NN      NN      NN      TT      DDDDDDDD  SSSSSSSS  PP
DDDDDDDD      IIIIII      SSSSSSSS  MM      MM  NN      NN      NN      TT      DDDDDDDD  SSSSSSSS  PP
                                           ....
                                           ....
                                           ....
                                           ....

LL      IIIIII      SSSSSSSS
LL      IIIIII      SSSSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SSSSSS
LL      II      SSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LLLLLLLLLLLL  IIIIII      SSSSSSSS
LLLLLLLLLLLL  IIIIII      SSSSSSSS
```



DISMNTDSP  
Table of contents

- DISMOUNT system service dispatcher<sup>B 2</sup>

15-SEP-1984 23:42:38 VAX/VMS Macro V04-00

Page 0

|     |     |                                         |
|-----|-----|-----------------------------------------|
| (1) | 106 | Declarations and Equates                |
| (1) | 168 | Transfer Vector and Service Definitions |
| (1) | 205 | Change Mode Dispatcher Vector Block     |
| (1) | 253 | Kernel Mode Dispatcher                  |
| (1) | 311 | Executive Mode Dispatcher               |

```
0000 1 .TITLE DISMNTDSP - DISMOUNT system service dispatcher
0000 2 .IDENT 'V04-000'
0000 3
0000 4 *****
0000 5
0000 6 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
0000 7 * DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.
0000 8 * ALL RIGHTS RESERVED.
0000 9
0000 10 * THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED
0000 11 * ONLY IN ACCORDANCE WITH THE TERMS OF SUCH LICENSE AND WITH THE
0000 12 * INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR ANY OTHER
0000 13 * COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY
0000 14 * OTHER PERSON. NO TITLE TO AND OWNERSHIP OF THE SOFTWARE IS HEREBY
0000 15 * TRANSFERRED.
0000 16
0000 17 * THE INFORMATION IN THIS SOFTWARE IS SUBJECT TO CHANGE WITHOUT NOTICE
0000 18 * AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT
0000 19 * CORPORATION.
0000 20
0000 21 * DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS
0000 22 * SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.
0000 23
0000 24 *****
0000 25
0000 26
0000 27 Facility: MOUNT/DISMOUNT System Services
0000 28 ++
0000 29 Abstract:
0000 30 This module contains the dispatcher for the MOUNT and DISMOUNT
0000 31 system services, named $MOUNT and $DISMOU respectively. Both
0000 32 mount and dismount are implemented as privileged shareable images.
0000 33
0000 34 Overview:
0000 35 The $MOUNT and $DISMOU system services are contained in privileged
0000 36 shareable images that are linked into user program images in exactly
0000 37 the same fashion as any shareable image. The creation and installation
0000 38 of a privileged, shareable image is slightly different from that
0000 39 of an ordinary shareable image. These differences are:
0000 40
0000 41 1. A vector defining the entry points and providing other
0000 42 control information to the image activator. This vector
0000 43 is a the lowest address in an image section with the VEC
0000 44 attribute.
0000 45
0000 46 2. The shareable image is linked with the /PROTECT option
0000 47 that marks all of the image sections so that they will
0000 48 protected and given EXEC mode ownership by the image
0000 49 activator.
0000 50
0000 51 3. The shareable image MUST be installed /SHARE /PROTECT
0000 52 with the INSTALL utility in order for the image activator
0000 53 to connect the privileged shareable image to the change mode
0000 54 dispatchers.
0000 55
0000 56 A privileged shareable image implementing system services is comprised
0000 57
```



```
0000 58 : of the following major components:
0000 59 :
0000 60 : 1. A transfer vector containing all of the entry points and
0000 61 : collecting them at the lowest virtual address in the shareable
0000 62 : image. This formalism enables revision of the shareable
0000 63 : image without necessitating the relinking of images that
0000 64 : use it.
0000 65 :
0000 66 : 2. A Privileged Library Vector in a PSECT with the VEC attribute
0000 67 : that describes the entry points for dispatching EXEC and
0000 68 : KERNEL mode services along with validation information.
0000 69 :
0000 70 : 3. A dispatcher for kernel mode services. This code will
0000 71 : be called by the VMS change mode dispatcher when it
0000 72 : fails to recognize a kernel mode service request.
0000 73 :
0000 74 : 4. A dispatcher for executive mode services. This code will
0000 75 : be called by the VMS change mode dispatcher when it fails
0000 76 : to recognize an executive mode service request.
0000 77 :
0000 78 : 5. Service routines to perform the various services.
0000 79 :
0000 80 :
0000 81 : Environment:
0000 82 :
0000 83 : VAX/VMS operating system, installed as a privileged shareable image.
0000 84 :
0000 85 : --
0000 86 :
0000 87 : Author:
0000 88 :
0000 89 : Steven T. Jeffreys
0000 90 :
0000 91 : Modified by:
0000 92 :
0000 93 : V03-001 STJ3060 Steven T. Jeffreys, 24-Feb-1983
0000 94 : Set SP equal to FP before dispatching to SYSSDISMOU.
0000 95 : This is VERY important, as high-level languages assume this
0000 96 : is true upon entry to a routine.
0000 97 :
0000 98 : V02-002 STJ0203 Steven T. Jeffreys, 07-Feb-1982
0000 99 : Add R4 to the $DISMOU register save mask.
0000 100 :
0000 101 : V02-001 STJ0106 Steven T. Jeffreys, 18-Aug-1981
0000 102 : Removed .LIBRARY reference to SYSSLIBRARY:LIB.MLB
0000 103 :
0000 104 : --
```

```
0000 106 .SBTTL Declarations and Equates
0000 107 :
0000 108 Macro Definitions
0000 109 :
0000 110 DEFINE_SERVICE - A macro to make the appropriate entries in several
0000 111 different PSECTs required to define an EXEC or KERNEL
0000 112 mode service. These include the transfer vector,
0000 113 the case table for dispatching, and a table containing
0000 114 the number of required arguments.
0000 115 :
0000 116 DEFINE_SERVICE Name,Number_of_Arguments,Mode
0000 117 :
0000 118 .MACRO DEFINE_SERVICE,NAME,NARG=0,MODE=KERNEL
0000 119 .PSECT $$$TRANSFER_VECTOR,PAGE,NOWRT,EXE,PIC
0000 120 .ALIGN QUAD ; Align entry points for speed and style
0000 121 .TRANSFER NAME ; Define name as universal symbol for entry
0000 122 .MASK NAME,^M<R4> ; Use entry mask defined in main routine
0000 123 .IF IDN MODE,KERNEL
0000 124 CHMK #<KCODE_BASE+KERNEL_COUNTER> ; Change to kernel mode and execute
0000 125 RET ; Return
0000 126 KERNEL_COUNTER=KERNEL_COUNTER+1 ; Advance counter
0000 127 :
0000 128 .PSECT KERNEL_NARG,BYTE,NOWRT,EXE,PIC
0000 129 .BYTE NARG ; Define number of required arguments
0000 130 :
0000 131 .PSECT DISMNTDSP_KERNEL_DISP1,BYTE,NOWRT,EXE,PIC
0000 132 .WORD 2+NAME-KCASE_BASE ; Make entry in kernel mode CASE table
0000 133 :
0000 134 .IFF
0000 135 CHME #<ECODE_BASE+EXEC_COUNTER> ; Change to executive mode and execute
0000 136 RET ; Return
0000 137 EXEC_COUNTER=EXEC_COUNTER+1 ; Advance counter
0000 138 :
0000 139 .PSECT EXEC_NARG,BYTE,NOWRT,EXE,PIC
0000 140 .BYTE NARG ; Define number of required arguments
0000 141 :
0000 142 .PSECT DISMNTDSP_EXEC_DISP1,BYTE,NOWRT,EXE,PIC
0000 143 .WORD 2+NAME-ECASE_BASE ; Make entry in exec mode CASE table
0000 144 .ENDC
0000 145 .ENDM DEFINE_SERVICE
0000 146 :
0000 147 Equated Symbols
0000 148 :
0000 149 :
0000 150 $PLVDEF ; Define PLV offsets and values
0000 151 $$$DEF ; Define system status codes
0000 152 :
0000 153 Initialize counters for change mode dispatching codes
0000 154 :
00000000 0000 155 KERNEL_COUNTER=0 ; Kernel code counter
00000000 0000 156 EXEC_COUNTER=0 ; Exec code counter
0000 157 :
0000 158 :
0000 159 Own Storage
0000 160 :
00000000 0000 161 .PSECT KERNEL_NARG,BYTE,NOWRT,EXE,PIC
0000 162 KERNEL_NARG: ; Base of byte table containing the
```



- DISMOUNT system service dispatcher<sup>F 2</sup>  
Declarations and Equates

15-SEP-1984 23:42:38 VAX/VMS Macro V04-00 Page 4  
5-SEP-1984 00:10:42 [DISMOU.SRC]DISMNTDSP.MAR;1 (1)

[illegible]

```
0000 168 .SBTTL Transfer Vector and Service Definitions
0000 169 :++
0000 170 : The use of transfer vectors to effect entry to the system services
0000 171 : enables some updating of the shareable image containing them without necessitating
0000 172 : a re-link of all programs that call them. The PSECT containing the transfer
0000 173 : vector will be positioned at the lowest virtual address in the shareable image
0000 174 : and so long as the transfer vector is not re-ordered, programs linked with
0000 175 : one version of the shareable image will continue to work with the next.
0000 176 :
0000 177 : Thus as additional services are added to a privileged shareable image, their
0000 178 : definitions should be added to the end of the following list to ensure that
0000 179 : programs using previous versions of it will not need to be re-linked.
0000 180 : To completely avoid relinking existing programs the size of the privileged
0000 181 : shareable image must not change so some padding will be required to provide
0000 182 : the opportunity for future growth.
0000 183 :--
0000 184
0000 185 DEFINE_SERVICE SYSSDISMOU,2,KERNEL ; $DISMOU system service
0002 186
0002 187 :
0002 188 : The base values used to generate the dispatching codes should be negative for
0002 189 : user services and must be chosen to avoid overlap with any other privileged
0002 190 : shareable images that will be used concurrently. Their definition is
0002 191 : deferred to this point in the assembly to cause their use in the preceding
0002 192 : macro calls to be forward references that guarantee the size of the change
0002 193 : mode instructions to be four bytes. This satisfies an assumption that is
0002 194 : made by for services that have to wait and be retried. The PC for retrying
0002 195 : the change mode instruction that invokes the service is assumed to be 4 bytes
0002 196 : less than that saved in the change mode exception frame. Of course, the particula
0002 197 : service routine determines whether this is possible.
0002 198
0002 199 : The change-mode codes available to $MOUNT and $DISMOU are the decimal values
0002 200 : from 16520 to 16527.
0002 201 :
00004088 0002 202 KCODE_BASE=16520 ; Base CHMK code value for these services
00000000 0002 203 ECODE_BASE=0 ; Base CHME code value for these services
```



```
0002 205 .SBTTL Change Mode Dispatcher Vector Block
0002 206 :++
0002 207 : This vector is used by the image activator to connect the privileged shareable
0002 208 : image to the VMS change mode dispatcher. The offsets in the vector are self-
0002 209 : relative to enable the construction of position independent images. The system
0002 210 : version number will be used by the image activator to verify that this shareable
0002 211 : image was linked with the symbol table for the current system.
0002 212 :
0002 213 :
0002 214 :
0002 215 :
0002 216 :
0002 217 :
0002 218 :
0002 219 :
0002 220 :
0002 221 :
0002 222 :
0002 223 :
0002 224 :
0002 225 :
0002 226 :
0002 227 :
0002 228 :
0002 229 :
0002 230 :
0002 231 :
0002 232 :
0002 233 :
0002 234 :
0002 235 :
0002 236 :
0002 237 :
0002 238 :
0002 239 :
0002 240 :
0002 241 :
00000000 242 :
0000 243 :
00000001 0000 244 :
00000000 0004 245 :
00000003 0008 246 :
FFFFFFFF 000C 247 :
00000000 0010 248 :
00000000 0014 249 :
00000000 0018 250 :
00000000 001C 251 :
```

Change Mode Vector Format

|                                          |               |
|------------------------------------------|---------------|
| Vector Type Code<br>(PLVSC_TYP_CM0D)     | PLVSL_TYPE    |
| System Version Number<br>(SYSSK_VERSION) | PLVSL_VERSION |
| Kernel Mode Dispatcher Offset            | PLVSL_KERNEL  |
| Exec Mode Entry Offset                   | PLVSL_EXEC    |
| Reserved                                 |               |
| Reserved                                 |               |
| RMS Dispatcher Offset                    | PLVSL_RMS     |
| Address Check                            | PLVSL_CHECK   |

```
.PSECT DISMNTDSP,PAGE,VEC,PIC,NOWRT,EXE
.LONG PLVSC_TYP_CM0D : Set type of vector to change mode dispatch
.LONG SYSSK_VERSION : Identify system version
.LONG KERNEC_DISPATCH- : Offset to kernel mode dispatcher
.LONG EXEC_DISPATCH- : Offset to executive mode dispatcher
.LONG 0 : Reserved.
.LONG 0 : Reserved.
.LONG 0 : No RMS dispatcher
.LONG 0 : Address check - PIC image
```

```
0020 253 .SBTTL Kernel Mode Dispatcher
0020 254 :++
0020 255 : Input Parameters:
0020 256 :
0020 257 : (SP) - Return address if bad change mode value
0020 258 :
0020 259 : R0 - Change mode argument value.
0020 260 :
0020 261 : R4 - Current PCB Address. (Therefore R4 must be specified in all
0020 262 : register save masks for kernel routines.)
0020 263 :
0020 264 : AP - Argument pointer existing when the change
0020 265 : mode instruction was executed.
0020 266 :
0020 267 : FP - Address of minimal call frame to exit
0020 268 : the change mode dispatcher and return to
0020 269 : the original mode.
0020 270 :--
00000000 271 .PSECT DISMNTDSP_KERNEL_DISPO,BYTE,NOWRT,EXE,PIC
50 0C 3C 0000 272 KACCVIO: ; Kernel access violation
04 0003 273 MOVZWL #SS$_ACCVIO,R0 ; Set access violation status code
0004 274 RET ; and return
50 0114 8F 3C 0004 275 KINSFARG: ; Kernel insufficient arguments.
04 0009 276 MOVZWL #SS$_INSFARG,R0 ; Set status code and
05 000A 277 RET ; return
000B 278 KNOTME: RSB ; RSB to forward request
000B 279
000B 280 KERNEL_DISPATCH:: ; Entry to dispatcher
51 BF78 C0 9E 000B 281 MOVAB W^KCODE_BASE(R0),R1 ; Normalize dispatch code value
F8 19 0010 282 BLSS KNOTME ; Branch if code value too low
01 51 B1 0012 283 CMPW R1,#KERNEL_COUNTER ; Check high limit
F3 1E 0015 284 BGEQU KNOTME ; Branch if out of range
0017 285 :
0017 286 : The dispatch code has now been verified as being handled by this dispatcher,
0017 287 : now the argument list will be probed and the required number of arguments
0017 288 : verified.
0017 289 :
51 51 0000'CF41 9A 0017 290 MOVZBL W^KERNEL_NARG[R1],R1 ; Get required argument count
00000004 9F41 DE 001D 291 MOVAL @#4[R1],R1 ; Compute byte count including arg count
BF78'CF40 6C 91 0025 292 IFNORD R1,(AP),KACCVIO ; Branch if arglist not readable
D1 1F 002B 293 CMPB (AP),W^KERNEL_NARG-KCODE_BASE[R0] ; Check for required number
5E 5D 0031 294 BLSSU KINSFARG ; of arguments
50 AF 0033 295 MOVL FP,SP ; Set SP equal to FP
0036 296 CASEW R0,- ; Case on change mode
0038 297 - ; argument value
0038 298 #KCODE_BASE,- ; Base value
0038 299 #<KERNEL_COUNTER-1> ; Limit value (number of entries)
003C 300 KCASE_BASE: ; Case table base address for DEFINE_SERVICE
003C 301 :
003C 302 : Case table entries are made in the PSECT DISMNTDSP_KERNEL_DISP1 by
003C 303 : invocations of the DEFINE_SERVICE macro. The three PSECTS,
003C 304 : DISMNTDSP_KERNEL_DISPO,1,2 will be abutted in lexical order at link-time.
003C 305 :
00000000 306 .PSECT DISMNTDSP_KERNEL_DISP2,BYTE,NOWRT,EXE,PIC
0000 307 BUG_CHECK IVSSRVROST,FATAL ; Invalid system service request
05 0004 308 RSB ; Return to reject out of
0005 309 ; range value
```



```
0005 311 .SBTTL Executive Mode Dispatcher
0005 312 :++
0005 313 : Input Parameters:
0005 314 :
0005 315 : (SP) - Return address if bad change mode value
0005 316 :
0005 317 : R0 - Change mode argument value.
0005 318 :
0005 319 : AP - Argument pointer existing when the change
0005 320 : mode instruction was executed.
0005 321 :
0005 322 : FP - Address of minimal call frame to exit
0005 323 : the change mode dispatcher and return to
0005 324 : the original mode.
0005 325 :--
0000 0000 326 .PSECT DISMNTDSP_EXEC_DISPO,BYTE,NOWRT,EXE,PIC
50 0C 3C 0000 327 EACCVIO: ; Exec access violation
04 0003 328 MOVZWL #SS$_ACCVIO,R0 ; Set access violation status code
0004 329 RET ; and return
50 0114 8F 3C 0004 330 EINSFARG: ; Exec insufficient arguments.
04 0009 331 MOVZWL #SS$_INSFARG,R0 ; Set status code and
05 000A 332 RET ; return
000B 333 ENOTME: RSB ; RSB to forward request
000B 334
51 0000 C0 9E 000B 335 EXEC_DISPATCH:: ; Entry to dispatcher
F8 19 0010 336 MOVAB W^ECODE_BASE(R0),R1 ; Normalize dispatch code value
00 51 B1 0012 337 BLSS ENOTME ; Branch if code value too low
F3 1E 0015 338 CMPW R1,#EXEC_COUNTER ; Check high limit
0017 339 BGEQU ENOTME ; Branch if out of range
0017 340 :
0017 341 : The dispatch code has now been verified as being handled by this dispatcher,
0017 342 : now the argument list will be probed and the required number of arguments
0017 343 : verified.
0017 344 :
51 51 0000'CF41 9A 0017 345 MOVZBL W^EXEC_NARG[R1],R1 ; Get required argument count
00000004 9F41 DE 001D 346 MOVAL @#4[R1],R1 ; Compute byte count including arg count
0000'CF40 6C 91 0025 347 IFNORD R1,(AP),EACCVIO ; Branch if arglist not readable
D1 1F 002B 348 CMPB (AP),W^<EXEC_NARG-ECODE_BASE>[R0] ; Check for required number
5E 5D D0 0031 349 BLSSU EINSFARG ; of arguments
50 AF 0033 350 MOVL FP,SP ; Set SP equal to FP
0036 351 CASEW R0,- ; Case on change mode
0038 352 - ; argument value
0038 353 #ECODE_BASE,- ; Base value
FFFF 8F 00 0038 354 #<EXEC_COUNTER-1> ; Limit value (number of entries)
003C 355 ECASE_BASE: ; Case table base address for DEFINE_SERVICE
003C 356 :
003C 357 : Case table entries are made in the PSECT DISMNTDSP_EXEC_DISP1 by
003C 358 : invocations of the DEFINE_SERVICE macro. The three PSECTS,
003C 359 : DISMNTDSP_EXEC_DISPO,1,2 will be abutted in lexical order at link-time.
00000000 360 :
0000 361 .PSECT DISMNTDSP_EXEC_DISP2,BYTE,NOWRT,EXE,PIC
05 0004 362 BUG_CHECK IVSSRVRQST,FATAL ; Invalid system service request
0005 363 RSB ; Return to reject out of
0005 364 ; range value
0005 365
0005 366 .END
```

DISMNTDSP  
Symbol table- DISMOUNT system service dispatcher<sup>K 2</sup>

15-SEP-1984 23:42:38

VAX/VMS Macro V04-00

Page 9

(1)

5-SEP-1984 00:10:42

[DISMOU.SRC]DISMNTDSP.MAR;1

|                 |            |    |    |
|-----------------|------------|----|----|
| BUGS_IVSSRVRQST | *****      | X  | 08 |
| EACCVIO         | 00000000   | P  | 09 |
| ECASE_BASE      | 0000003C   | R  | 09 |
| ECODE_BASE      | = 00000000 |    |    |
| EINSFARG        | 00000004   | R  | 09 |
| ENOTME          | 0000000A   | R  | 09 |
| EXEC_COUNTER    | = 00000000 |    |    |
| EXEC_DISPATCH   | 0000000B   | RG | 09 |
| EXEC_NARG       | 00000000   | R  | 03 |
| KACCVIO         | 00000000   | R  | 07 |
| KCASE_BASE      | 0000003C   | R  | 07 |
| KCODE_BASE      | = 00004088 |    |    |
| KERNEL_COUNTER  | = 00000001 |    |    |
| KERNEL_DISPATCH | 0000000B   | RG | 07 |
| KERNEL_NARG     | 00000000   | R  | 02 |
| KINSFARG        | 00000004   | R  | 07 |
| KNOTME          | 0000000A   | R  | 07 |
| PLVSC_TYP_CM0D  | = 00000001 |    |    |
| SSS_ACCVIO      | = 0000000C |    |    |
| SSS_INSFARG     | = 00000114 |    |    |
| SYSSDISMOU      | *****      | X  | 04 |
| SYSSK_VERSION   | *****      | X  | 06 |

+-----+  
! Psect synopsis !  
+-----+

| PSECT name             | Allocation      | PSECT No. | Attributes |     |     |     |     |       |       |      |       |       |      |  |  |  |  |  |  |
|------------------------|-----------------|-----------|------------|-----|-----|-----|-----|-------|-------|------|-------|-------|------|--|--|--|--|--|--|
| . ABS .                | 00000000 ( 0.)  | 00 ( 0.)  | NOPIC      | USR | CON | ABS | LCL | NOSHR | NOEXE | NORD | NOWRT | NOVEC | BYTE |  |  |  |  |  |  |
| \$ABSS                 | 00000000 ( 0.)  | 01 ( 1.)  | NOPIC      | USR | CON | ABS | LCL | NOSHR | EXE   | RD   | WRT   | NOVEC | BYTE |  |  |  |  |  |  |
| KERNEL_NARG            | 00000001 ( 1.)  | 02 ( 2.)  | PIC        | USR | CON | REL | LCL | NOSHR | EXE   | RD   | NOWRT | NOVEC | BYTE |  |  |  |  |  |  |
| EXEC_NARG              | 00000000 ( 0.)  | 03 ( 3.)  | PIC        | USR | CON | REL | LCL | NOSHR | EXE   | RD   | NOWRT | NOVEC | BYTE |  |  |  |  |  |  |
| \$\$\$TRANSFER VECTOR  | 00000007 ( 7.)  | 04 ( 4.)  | PIC        | USR | CON | REL | LCL | NOSHR | EXE   | RD   | NOWRT | NOVEC | PAGE |  |  |  |  |  |  |
| DISMNTDSP_KERNEL_DISP1 | 00000002 ( 2.)  | 05 ( 5.)  | PIC        | USR | CON | REL | LCL | NOSHR | EXE   | RD   | NOWRT | NOVEC | BYTE |  |  |  |  |  |  |
| DISMNTDSP_KERNEL_DISP0 | 00000020 ( 32.) | 06 ( 6.)  | PIC        | USR | CON | REL | LCL | NOSHR | EXE   | RD   | NOWRT | VEC   | PAGE |  |  |  |  |  |  |
| DISMNTDSP_KERNEL_DISP0 | 0000003C ( 60.) | 07 ( 7.)  | PIC        | USR | CON | REL | LCL | NOSHR | EXE   | RD   | NOWRT | NOVEC | BYTE |  |  |  |  |  |  |
| DISMNTDSP_KERNEL_DISP2 | 00000005 ( 5.)  | 08 ( 8.)  | PIC        | USR | CON | REL | LCL | NOSHR | EXE   | RD   | NOWRT | NOVEC | BYTE |  |  |  |  |  |  |
| DISMNTDSP_EXEC_DISP0   | 0000003C ( 60.) | 09 ( 9.)  | PIC        | USR | CON | REL | LCL | NOSHR | EXE   | RD   | NOWRT | NOVEC | BYTE |  |  |  |  |  |  |
| DISMNTDSP_EXEC_DISP2   | 00000005 ( 5.)  | 0A ( 10.) | PIC        | USR | CON | REL | LCL | NOSHR | EXE   | RD   | NOWRT | NOVEC | BYTE |  |  |  |  |  |  |

+-----+  
! Performance indicators !  
+-----+

| Phase                  | Page faults | CPU Time    | Elapsed Time |
|------------------------|-------------|-------------|--------------|
| Initialization         | 29          | 00:00:00.07 | 00:00:01.27  |
| Command processing     | 114         | 00:00:00.61 | 00:00:03.71  |
| Pass 1                 | 175         | 00:00:04.48 | 00:00:13.05  |
| Symbol table sort      | 0           | 00:00:00.66 | 00:00:01.30  |
| Pass 2                 | 72          | 00:00:01.14 | 00:00:05.65  |
| Symbol table output    | 4           | 00:00:00.03 | 00:00:00.22  |
| Psect synopsis output  | 3           | 00:00:00.07 | 00:00:00.21  |
| Cross-reference output | 0           | 00:00:00.00 | 00:00:00.00  |
| Assembler run totals   | 397         | 00:00:07.06 | 00:00:25.56  |



The working set limit was 1500 pages.  
23738 bytes (47 pages) of virtual memory were used to buffer the intermediate code.  
There were 30 pages of symbol table space allocated to hold 437 non-local and 0 local symbols.  
366 source lines were read in Pass 1, producing 29 object records in Pass 2.  
14 pages of virtual memory were used to define 11 macros.

-----  
! Macro library statistics !  
-----

| Macro library name                 | Macros defined |
|------------------------------------|----------------|
| -----                              | -----          |
| \$255\$DUA28:[SYS.OBJ]LIB.MLB;1    | 2              |
| \$255\$DUA28:[SYSLIB]STARLET.MLB;2 | 5              |
| TOTALS (all libraries)             | 7              |

493 GETS were required to define 7 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS\$:DISMNTDSP/OBJ=OBJ\$:DISMNTDSP MSRC\$:DISMNTDSP/UPDATE=(ENH\$:DISMNTDSP)+EXECML\$/LIB



